

Amendments to the Specification:

57 Please replace paragraph [0071] with new paragraph [0071], shown below 57 KW 8/31/07

[0057] The flexible link 190, in general, functions as a leaf spring. When the carriage 160 travels away from the wafer 12, for example, the carriage 160 pulls the center 191 of the flexible link 190 away from the wafer 12 and rotates the gripper arms 200 into the wafer-engaging position (Fig. 4). The flexible link 190 compensates for any amount of wafer offset so that, for example, both gripper arms 200 and 202 engage the wafer 12 even if the wafer is not centered on the wafer blade 111. The flexible link 190 also prevents overloading of the drive mechanism 144 if an operator manually inserts a wafer of the wafer blade 111.

Please replace paragraph [0051] with new paragraph [0051], shown below

[0051] The motor assembly 144, through the cam 150, drives the carriage 160 150. Any motion by the cam 150 preferably imparts motion to the carriage 160. The end of cam travel (e.g., cam 150 is located at 0° or 180° degrees), however, may allow a couple degrees of cam motion to translate into no linear motion of the carriage 160. The cam 150, in other words, is not doing useful work during some portion. If the cam 150 is allowed to rotate completely to the 0° or 180° position (defined as an "overtravel" position), the cam 150 further may jam or the end effector 100 will lose track of the precise location of the carriage 160.

Please replace paragraph [0064] with new paragraph [0064], shown below

57 [0064] The force sensing device 228 provides real-time data to the motor assembly 144 so that the end effector can determine immediately if there is a malfunction. If, for example, the gripper arms 200 attempt to grip the wafer 12 and a wafer 12 is not present on the wafer blade 111, or the wafer 12 slips on the wafer blade 111, the position of motor 146 (as determined by the Hall-effect sensors) will indicate that the gripper arms 200 missed the wafer 12 and moved too far. If, on the other hand, the wafer 12 pops off the support pads 126, the amount of force measured by the force sensing device 228 will drop immediately and indicate to the end effector that a malfunction has occurred. The thru-beam sensors 222 and 224, in addition the force sensing device 228, also detects the edge of a wafer 12. In general, the force sensing device 228 and the optical sensors provide a double check system to detect a wafer 12 on the wafer blade 111.